

# Apple Technical Procedures

## SERVICE NOTICE

### THE FOLLOWING TECHNICAL PROCEDURE CHANGES ARE INCLUDED IN THE JUNE TECHNICAL PROCEDURES MAILING

A supplement for the Module ID manual (#072-0184) has been included with this mailing. The supplement should be placed in the CPU PCB section for the Macintosh Plus. This supplement will be replaced with the next Module ID update.

#### **TECHNICAL PROCEDURES MANUALS - VOLUMES ONE THROUGH SEVEN**

**Illustrated Parts Lists** - There have been changes and additions to the Illustrated Parts List sections for several products in Volumes One through Seven.

**Apple IIe** - Service Notes clarifies how to read manufacturing numbers to identify what version of the logic board the customer has.

**ImageWriter** - A minor correction has been made to the Troubleshooting Symptom Table.

**ImageWriter II** - Procedures for installing the paper-out sensor and logic board compatibility have been added to Service Notes. Additional procedures have also been added to the Take-Apart section to reflect the addition of the new sensor. We are in the process of converting this tab section into our new format. With the July 1987 mailing you will receive new procedures, reorganized and easier to use.

**CRT Safety and CRT Discharge Procedure Changes** - The Basics sections for the following monitors have been upgraded to current Apple CRT safety and CRT discharge policy:

**Monitor II/Monochrome Monitor IIe**

Name changed from General to Basics.

**AppleColor Monitor 100**

Name changed from General to Basics, and Take-Apart revised accordingly.

**Composite Monitor IIe/IIc - ColorMonitor IIe/IIc**

**AppleColor RGB Monitor**

Take-Apart section also revised due to changes in policy.

**Monochrome Monitor**

**High-Res Monochrome Monitor**

*Please take the time to look them over.*

**Monitor II/Monochrome Monitor IIe** - The platinum version of the Monitor II is now called the Apple Monochrome Monitor IIe. Except for the name and the color, the monitors are identical and all procedures are the same for both.

**Macintosh/Macintosh Plus** - The Basic section has been updated to incorporate the Apple CRT safety precautions and CRT Discharge procedures changes.

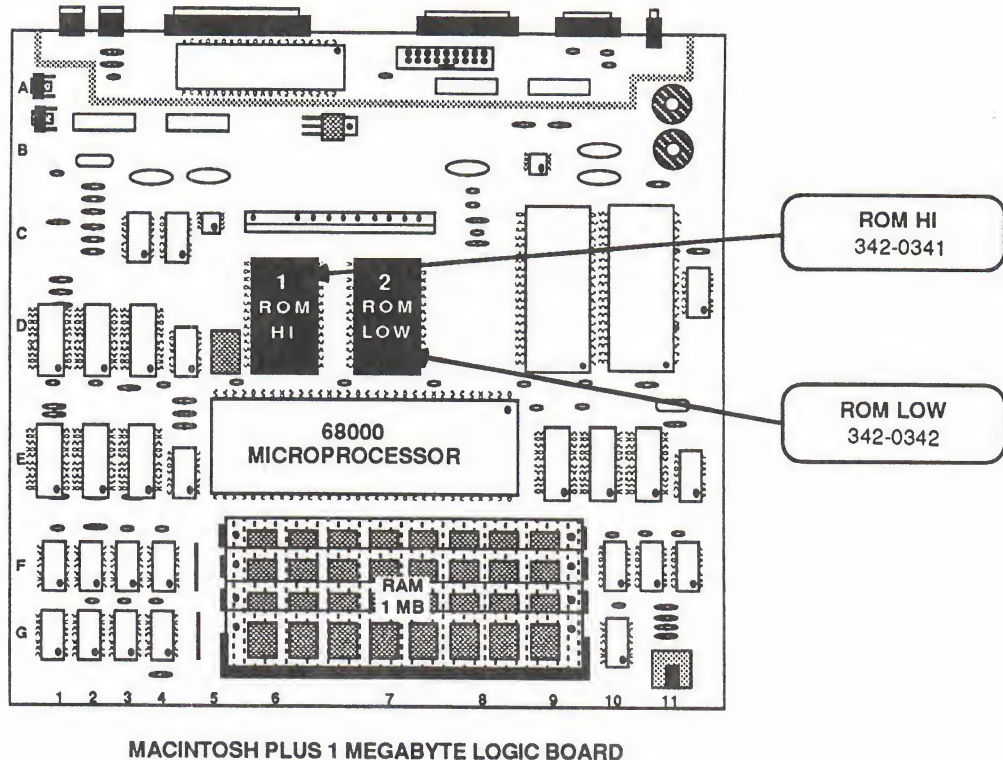
**Macintosh SE** - A new safety rule has been added to CRT Safety Rules: *Remember, never use a grounding wriststrap or heelstrap or work on a grounded workbench mat when discharging a monitor or when performing live adjustments.*

#### **LISA 1.0 AND LISA 2/MACINTOSH XL TECHNICAL PROCEDURES - 072-0085**

The Video Take-Apart sections for both the Lisa 1.0 and the Lisa 2/Macintosh XL have been updated to incorporate the Apple CRT safety precautions and CRT Discharge procedures changes. Illustrated Parts corrections are also included. If you do not subscribe to the Lisa Technical Procedures you may discard these procedures.

# Macintosh Plus Logic Board

Apple P/N 661-0321



## ACCEPTABLE BOOT ROM COMBINATIONS

Macintosh Plus Logic Boards must be returned with BOTH high and low boot ROMs installed. In addition, the boot ROMs must also be installed in the CORRECT VERSION COMBINATIONS. The only combinations that are acceptable are:

High Boot ROM:	342-0341-A	342-0341-B	342-0341-C
Low Boot ROM:	342-0342-A	342-0342-A	342-0342-B

If either or both boot ROMs are missing, or if the ROMs are installed with incorrect version combinations, the Logic Board is not acceptable.

Module ID - Supplement to CPU PCBs for the Macintosh Plus

June 1987





# Apple Technical Procedures

## SERVICE NOTICE

### THE FOLLOWING TECHNICAL PROCEDURE CHANGES ARE INCLUDED IN THE MARCH TECHNICAL PROCEDURES MAILING

**Module ID Manual** - From time to time we will be including supplemental pages for the Module ID Manual. In this mailing we have included Macintosh generated reproductions of the following modules: Macintosh SE Logic Board, SIMMs RAM, Power Supply, Analog Board, Video Board, 3.5-Inch 20 Megabyte HDA, and Apple Keyboard. The AppleTalk PC Card and the Apple IIe Extended Keyboard (Platinum) are also included.

### TECHNICAL PROCEDURES MANUALS - VOLUMES ONE THROUGH SIX

**Illustrated Parts List** - There has been a change to the Illustrated Parts List section for the ColorMonitor IIe/IIc to add AppleColor Composit Monitor IIe/IIc information.

**Apple Technical Resources** - The Recommended Technical References page which follows located behind the Volume One Main Table of Contents, has been updated to reflect new products and program changes.

**You Oughta Know...** - We have added Keyswitch Replacement procedures for the Apple DeskTop Bus Keyboards to Section 3. We have also added Electrostatic Discharge (ESD) as Section 6. This section includes ESD prevention rules and instructions for setting up an ESD-Safe workstation.

**Apple IIc** - We have clarified on the Internal Power Supply Shield Retrofit in Additional Procedures. We have also modified the Internal Power Supply Upgrade procedures to explain how to determine when the power supply has been reworked.

**Apple IIgs** - The lithium thionyl chloride batteries should be stored and disposed of in a specified manner. Refer to "Battery Replacement" procedures located in Additional Procedures for complete details.

**Daisy Wheel Printer** - Minor corrections have been made to the Troubleshooting section.

**ImageWriter II** - Corrections have been made to the Troubleshooting Flowcharts and Symptom Tables.

**ColorMonitor IIe/IIc** - We have added procedures to Service Notes for correcting the LED polarity for rev B, Series H logic boards. We have also added notes to Take-Apart to account for the LED problem.

**Disk Drives** - The Diagnostic section has been completely revised to reflect changes in the diagnostic diskette.

**Hard Disk 20SC** - Instructions for adapting the 3.5-inch HDA for the Hard Disk 20SC are given in the "Hard Disk Assembly" section under "Preparing the 3.5-Inch HDA Module."

**Macintosh SE** - This new tab section contains Basics, Take-Apart, Adjustments, Troubleshooting, and the Illustrated Parts List for the new CPU. We will be shipping temporary Diagnostic procedures with the new diagnostic diskette, and we will be issue permanent technical procedures in the April Mailing. Section VI has been left blank intentionally.

**AppleTalk** - Along with supplying your new tab for this section, we are sending the reprinted Diagnostic section, which reflects a change in the trade name.

**AppleShare** - This is a new tab section under Networks. This Troubleshooting section will inform you about documentation availability, installation, application compatibility, system software compatibility, and desk accessories, and will provide miscellaneous tips for troubleshooting AppleShare.

**AppleTalk PC Card** - This is also a new tab section under the Networks umbrella. It contains a product description, Theory of Operations, Option Switches, and Troubleshooting.



## MODULE IDENTIFICATION MANUAL SUPPLEMENT

In order to meet your needs, temporary module identification information will be included with the Technical Procedures mailings. Place the temporary pages in your Module Identification Manual until the next update. The temporary pages will be Macintosh-generated graphic sketches of any new modules.

With this mailing we have included a reproduction of the following modules:

### Macintosh SE

661-0369	Logic Board
661-0402	SIMMS RAM
661-0370	Power Supply
661-0371	Analog Board
661-0372	Video Board
661-0373	HDA, 20 Megabyte 3.5-inch
661-0383	Apple Keyboard

### AppleTalk PC Card

661-0356	AppleTalk PC Card
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### Apple IIe

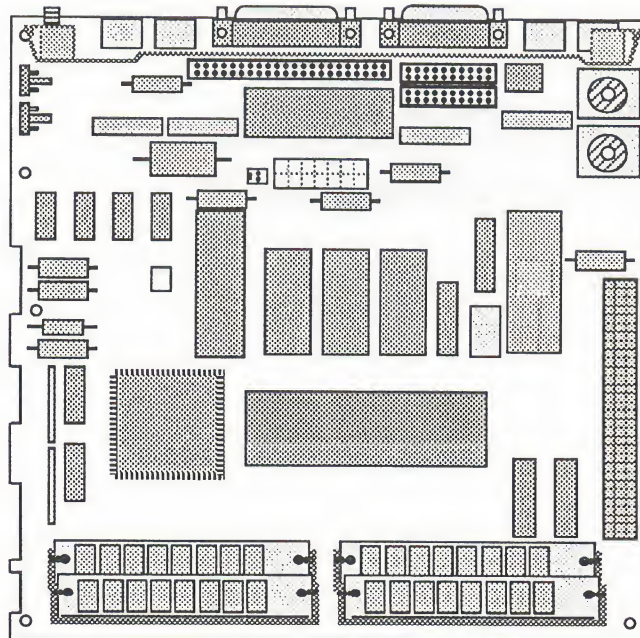
661-0357	Apple IIe Extended Keyboard (Platinum)
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If you do not have a Module Identification Manual, part # 072-0184, check with your *Service Programs Manual* for current ordering information.





# 661-0369 Logic Board



Module ID - Supplement for - Macintosh SE

March 1987

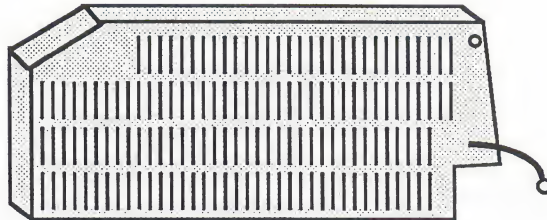
# 661-0402 SIMMS RAM



Module ID - Supplement for - Macintosh SE

March 1987

# 661-0370 Power Supply

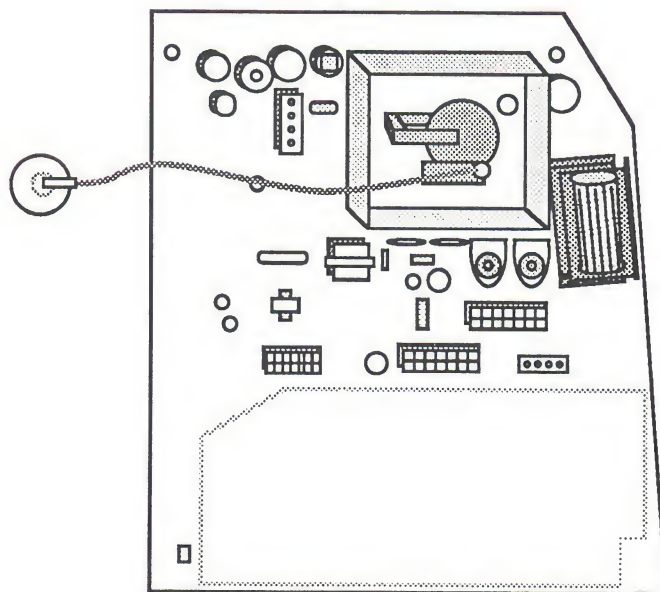


NOTE: 2 types of Macintosh SC power supplies have  
same service number.

Module ID - Supplement for - Macintosh SE

March 1987

# 661-0371 Analog Board

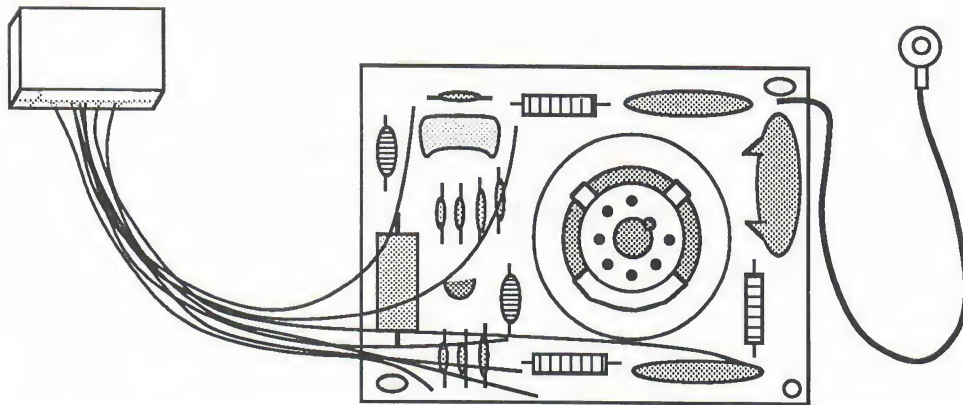


**NOTE:** Brightness knob not part of service module

**Module ID - Supplement for - Macintosh SE**

**March 1987**

# 661-0372 Video Board

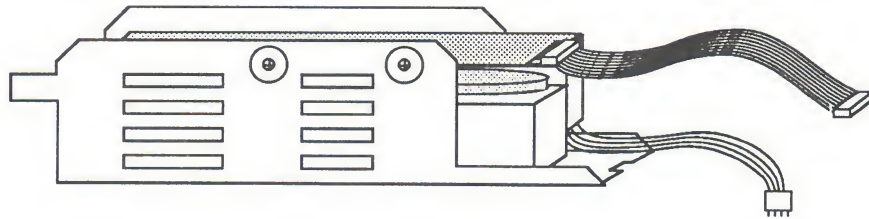


Module ID - Supplement for - Macintosh SE

March 1987



# 661-0373 HDA, 3.5", 20 Meg

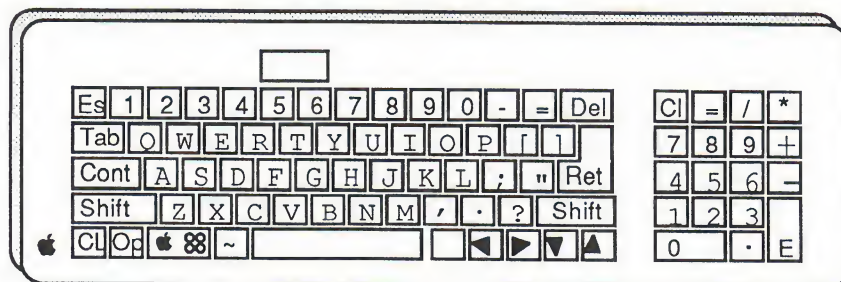


NOTE: Data cable is 50 pin on this  
HDA. The cable on 661-0302 is  
26 pin.

Module ID - Supplement for - Macintosh SE

March 1987

# 661-0383 Apple Keyboard

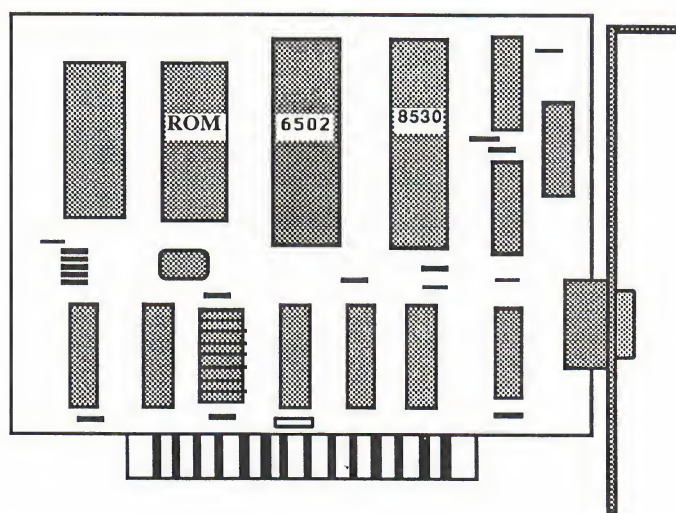


Module ID - Supplement for - Macintosh SE

March 1987



# 661-0356 AppleTalk PC Card



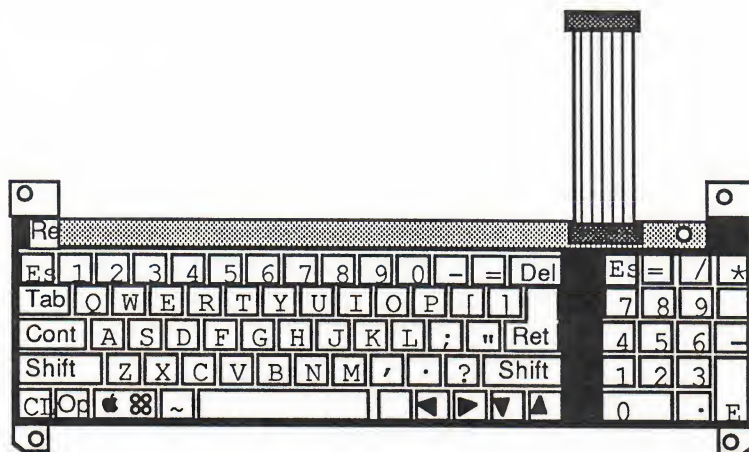
Module ID - Supplement for - AppleTalk PC Card

March 1987





# 661-0357 A IIe Extended Keyboard (Platinum)



Module ID - Supplement for - Apple IIe

March 1987



## SERVICE NOTICE

### MACINTOSH™ II SERVICE SEMINAR

Beginning in late April, and continuing through May, Apple Service will conduct Macintosh II Service Seminars (P/N 011-7085) **for technicians from accounts authorized to sell/service the Macintosh II**. This one day, **required** seminar, priced at \$40.00, will be held in selected cities across the U.S.

On April 1st, a complete listing of seminar locations, dates, and times will appear on AppleLink® in the Training folder under the Apple Programs icon. Procedures on seminar registration via AppleLink will also be detailed. AppleLink addresses and phone numbers are listed below should you require further information.

Campbell, CA	<ALINK: SVC.TRN.WEST>	(408) 370-4716
Charlotte, NC	<ALINK: SVC.TRN.EAST>	(704) 525-8120
Rolling Meadows, IL	<ALINK: SVC.TRN.CENT>	(312) 439-4777

The following technical information will be covered in the seminar:

#### **Electrostatic Discharge (ESD) & The Service Provider**

- the nature of this "invisible" problem
- ESD and microelectronic components
- technician safeguards against ESD-caused circuit degradation and/or failure

#### **Macintosh II**

- system configurations/upgrades
- functional theory of operation
- diagnostics
- servicing the malfunctioning system
- service "hints and tips"

In addition to new product demonstrations, time will be provided for hands-on interaction with the Macintosh II and for a brief Q&A session.



# **TECHNICAL PROCEDURES VOLUME I**

**P/N: 072-0062**

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Revision: June, 1986





# 🍏 Apple Technical Procedures

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# Apple Technical Resources

## for the Dealer Technician

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### RECOMMENDED TECHNICAL REFERENCES

The manuals marked with an asterisk (\*) in the list below can be purchased through the Media Exchange Program. Check your *Service Programs Manual* for prices and current availability.

Manuals	<u>Title</u>	<u>Part Number</u>
	Apple Pascal Operating System Reference	030-0100
*	Standard Input/Output Drivers	030-0143
*	Universal Parallel Interface Card	030-0255
	Super Serial Card	030-1258
*	Parallel Interface Card	030-0371
*	80 Column Text Card	030-0408
*	Apple II Reference	030-0004
*	Apple IIe Owner's	030-0356
*	Apple IIe Reference	030-0357
	Apple IIe, IIc AppleSoft Tutorial	030-0358
*	About Your Enhanced IIe	030-1141
*	Apple IIc Reference	030-0814
*	Apple IIc Programmers Guide	030-1196
*	Apple IIc Memory Expansion Card	030-1330
	Apple /// Owner's Guide	030-0121
	Apple /// Pascal Introduction, Filer & Editor	030-0238
	Apple /// ProFile User's	030-0272
*	Apple /// SOS Reference Manual, Volume I	030-0441
*	Apple /// SOS Reference Manual, Volume II	030-0442
*	Macintosh Plus Internal Drive	030-1245
*	Macintosh Plus	030-1246
*	Macintosh 512K Enhanced Owners	030-1326
*	Disk Upgrade 512K Enhanced	030-1327
*	Apple IIGs	030-1292
*	Apple IIGs Set Up Guide	030-1294
*	SCSI Manual	030-3118

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## ❑ DEALER TECHNICAL SUPPORT

The technical support lines listed below are for **your use only**. **DO NOT** give these numbers to your customers.

The following states use this number:

(408) 370-4740

Alaska  
Colorado  
Montana  
Oregon  
Western Nebraska

Arizona  
Hawaii  
New Mexico  
Utah  
Western Texas

California  
Idaho  
Nevada  
Washington  
Wyoming

The following states use this number:

(704) 527-4810

Alabama  
District of Columbia  
Georgia  
Massachusetts  
New Jersey  
Rhode Island  
Vermont

Connecticut  
Eastern Pennsylvania  
Maine  
Mississippi  
New York  
South Carolina  
Virginia

Delaware  
Florida  
Maryland  
New Hampshire  
North Carolina  
Tennessee

|| The following states use this number:

(312) 439-5533

Arkansas  
Indiana  
Kentucky  
Minnesota  
Ohio  
Texas  
Wisconsin

Eastern Nebraska  
Iowa  
Louisiana  
Missouri  
Oklahoma  
Western Pennsylvania

Illinois  
Kansas  
Michigan  
North Dakota  
South Dakota  
West Virginia

The Canadian areas use these numbers:

(Western) 1 (800) 387-9689  
(Central, Eastern) 1 (800) 268-9866  
(Toronto Only) (416) 475-2664

### Western Territories

Alberta  
British Columbia  
Manitoba  
Northwest Territories  
Saskatchewan  
Yukon Territory

### Central & Eastern Territories

Labrador  
New Brunswick  
Newfoundland  
Nova Scotia  
Ontario  
Prince Edward Island  
Quebec